

## Technical Information

### The One-Shot Casting Process

#### How, When & Why to Use It:

- 1) To produce precision and premium quality aluminum, zinc and magnesium castings.
- 2) Prototyping - to assist engineering in debugging design before committing to any tooling.
- 3) For very low-volume applications, including field replacements and lost tooling.
- 4) For parts with complex or unusual shapes.
- 5) For castings with thin walls or where weight is critical.
- 6) To simulate die castings for prototype evaluation.
- 7) To enable multiple design iterations (no tooling to change).
- 8) To reduce "time to market" on new programs and evaluate market potential.
- 9) To reduce time for machining and secondary operations.
- 10) To assist and reduce time for U.L. approval.

### Design & Technical Information

#### SIZE

No limitation but best range within 2 in. cube to 18 in. cube.

#### FINISH

153 micro-inch.

#### SHAPE

Considerable design freedom for unusual and complex shapes, including deep undercuts.

#### WALL THICKNESS

Thin wall: 0.030 in. - 0.060 in.

Average: 0.080 in. - 0.120 in.

Thick wall: 0.180 in. - 0.500 in.

#### GENERAL TOLERANCES

0 - 2 in.: +/- 0.005 in.

>2 in.: +/- 0.005 in. plus +/- 0.0015 in. for each inch over 2.

#### LIMITATIONS

The process is limited to non-ferrous metals with pouring temperatures below 2,000 °F - this includes aluminum, zinc and magnesium casting alloys and some copper-based alloys.

#### HOLES

Economical to cast small diameter holes to eliminate secondary drilling operations.

#### Alloys

Aluminum, zinc, magnesium and some copper-based casting alloys to the commercial and military specifications. See separate technical sheet.

#### DRAFT/RADII

No draft is needed.

Corner radii and fillets as required. 0.025 in. minimum recommended.

#### MECHANICAL PROPERTIES

Tensile - Yield - Elongation - as per the appropriate commercial and military specifications. See separate technical sheet.

#### DELIVERY

1 - 2 weeks.

#### TYPICAL APPLICATIONS

Castings for telecommunications, business machines, medical equipment, computers, automotive, aerospace, electronics and robotics.